

MULTIMEDIA



UNIVERSITY

STUDENT ID NO

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# MULTIMEDIA UNIVERSITY

## FINAL EXAMINATION

TRIMESTER 1, 2018/2019

**MMA1033 – VISUAL PROGRAMMING**

(All Sections / Groups)

22 OCTOBER 2018

9.00 am – 11.00 am

(2 Hours )

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### INSTRUCTIONS TO STUDENTS

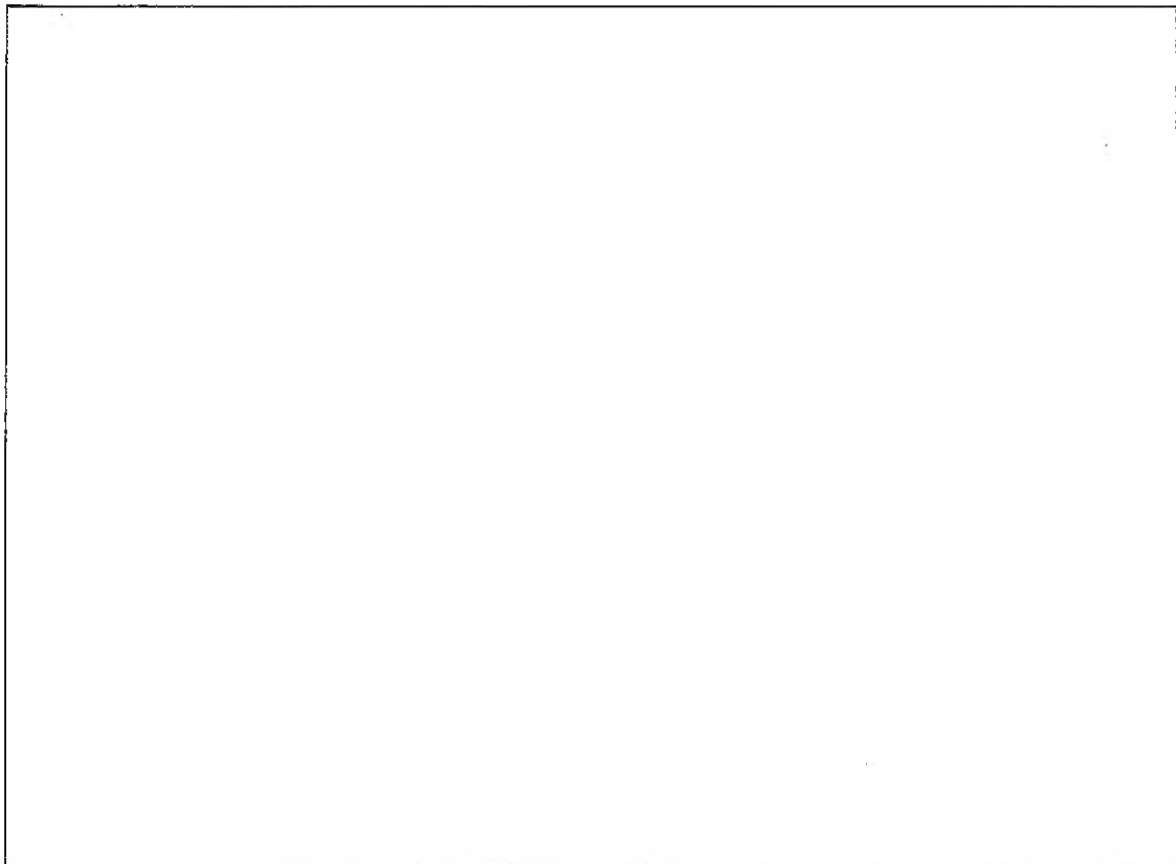
1. This question paper consists of 13 pages (including the front page).
2. Answer **ALL** questions.
3. Write all your answers in the answer box associated with each question.
4. Write your **SEAT NUMBER** on the question paper top right hand corner on this page.

**QUESTION 1**

(a) Based on the processing codes below, draw a shape as you will expect on the *Display Windows*.

```
size(400,400);  
beginShape();  
  vertex(50,150);  
  vertex(150,50);  
  vertex(150,100);  
  vertex(300,100);  
  vertex(350,150);  
  vertex(300,200);  
  vertex(150,200);  
  vertex(150,250);  
  vertex(50,150);  
endShape(CLOSE);
```

[3 marks]



**Continued...**

(b) Explain this code and each values in the function `size()`, `rect()`, `fill()`, `line()`, and `background()`, `ellipse()`.

- i) `size(400,500);`
- ii) `rect(55,65,15,25);`
- iii) `fill (255, 0, 0, 255);`
- iv) `line(10,80,50,20);`
- v) `background(125,0);`
- vi) `ellipse(10,20,30,40);`
- vii) `triangle(30, 75, 58, 20, 86, 75);`

[7 marks]

i)	
ii)	
iii)	
iv)	
v)	
vi)	
vii)	

**Continued...**

**QUESTION 2**

- (a) What is the values of x, y and z from this declaration of variables and initialization and partially run the program?

```
int x=10;  
int y;  
y = x + 10;  
int z =  
z=x+y*3;
```

**[3 marks]**

x=
y=
z=

- (b) Complete your codes using Processing to make the circle increasing in size.

**[3 marks]**

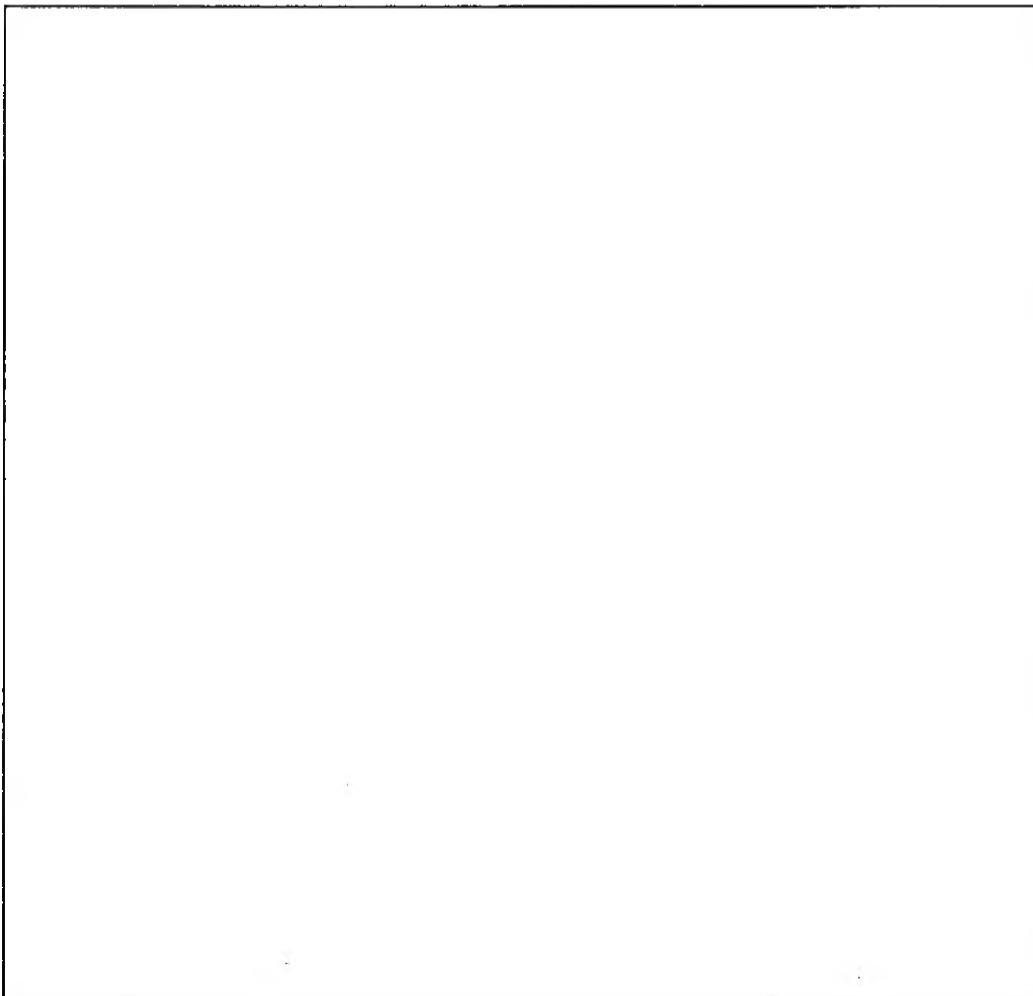
```
int circleSize=0;  
int circleX=100;  
int circleY=100;  
  
void setup() {  
  size(200,200);  
}  
  
void draw() {  
  background(255);  
  stroke(0);  
  fill(175);  
  ellipse(_____,_____,_____,____);  
  _____;  
}
```

**Continued...**

- (c) Based on the processing codes below, draw the shape as you will expect on the *Display Windows*.

[4 marks]

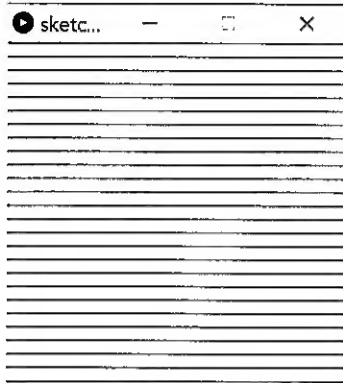
```
size(200,400);  
int x=30;  
int y=50;  
int z=30;  
  
rect(x,y,z,200);  
y=y+100;  
rect(x+z,y,z,200);  
y=y-120;  
rect(x+z*2,y,z,200);  
y=y+100;  
rect(x+z*3,y,z,200);
```



**Continued...**

**QUESTION 3**

(a) Fill in the blanks in the code to create the following screenshots.



[3 marks]

```
size(500,500);
background(255);

int y=0;
  while(y<____) {
    stroke(0);
    line(____,____,____,____);
    y=____+ 20;
  }
```

(b) Write the output of this function.

```
int grade = 80;
while (grade>75) {
println ("A+");
grade -=1;
}
```

[2 marks]

**Continued...**

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(c) What is an array? [1 mark]

(d) Write the declaration statements for the following arrays.

<b>10 integers</b>	
<b>1000 floating points</b>	

[2 marks]

(e) Rewrite the below processing code using constraint function.

```
if (r>255) {  
  r=255;  
} else if (r<0) {  
  r=0;  
}
```

[2 marks]

--

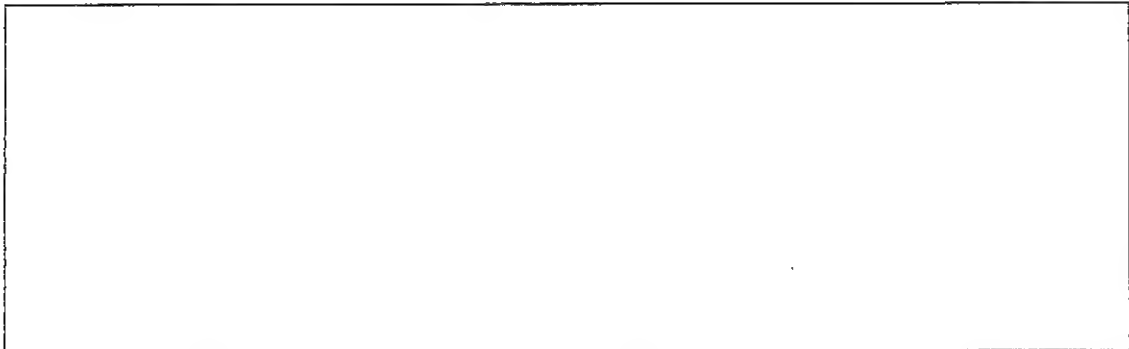
Continued...

**QUESTION 4**

- (a) Based on the processing codes below, draw a shape as you will expect on the *Display Windows*.

```
float x= 20;  
  
void setup(){  
  size(100,100);  
}  
void draw(){  
  background(204);  
  if(x<20){  
    ellipse(50,50,60,60);  
  }else{  
    rect(20,20,60,60);  
  }  
  line(x+30,0,x+30,100);  
}
```

[4 marks]



**Continued...**



(b) Are the following Boolean expression true or false? Assume variables int a=5, b=3 and c=2;

[2 marks]

- i)  $!(a \geq 5) =$  \_\_\_\_\_
- ii)  $(b == 3 \mid \mid c < 2 \&\& a > 5) =$  \_\_\_\_\_
- iii)  $(c < 2 \mid \mid b == 3 \&\& a > 5) =$  \_\_\_\_\_
- iv)  $(a > 5 \&\& b == 3 \mid \mid c < 2) =$  \_\_\_\_\_

(c) Examine the following code samples and write down your answer what will appear in the message window.

[4 marks]

i)

```
int myScore = 80;
if(myScore>80) {
    println("Very Good");
} else if (myScore >50) {
    println("Good");
} else {
    println("Not Good");
}
```

OUTPUT: \_\_\_\_\_

Continued...

ii)

```
int myScore = 50;
if(myScore>80) {
    println("Very Good");
} else if (myScore >=50) {
    println("Good");
} else {
    println("Not Good");
}
```

OUTPUT: \_\_\_\_\_

iii)

```
int myScore=90;
if(myScore>=90){
    ellipse(50,50,30,30);
} else {
    Rect(50,50,30,30);
}
```

OUTPUT: \_\_\_\_\_

iv)

```
int myScore=90;
if(myScore<=90){
    ellipse(50,50,30,30);
} else {
    Rect(50,50,30,30);
}
```

OUTPUT: \_\_\_\_\_

Continued...

**QUESTION 5**

(a) What is the function in Processing?

[1 mark]

(b) Why the function is used in Processing?

[2 marks]

(c) Predict the output of the following program by writing out what would appear in the *message window*.

[6 marks]

(i)

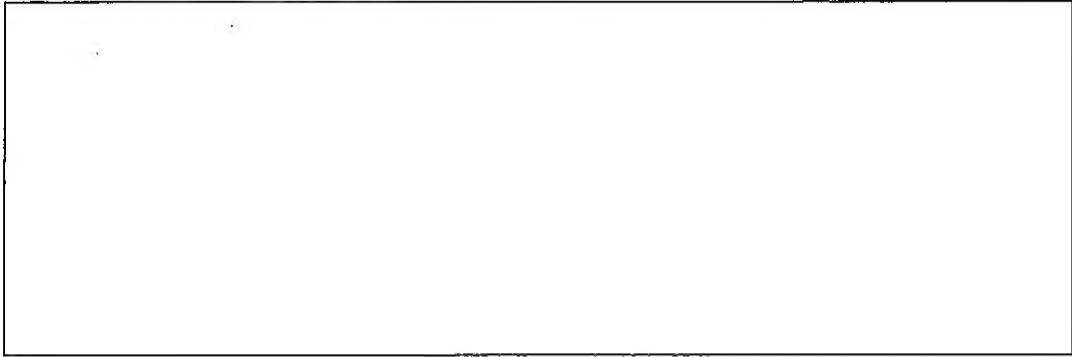
```
void draw() {  
  println("Ayah");  
  function2();  
  noLoop();  
}
```

```
void function1() {  
  println("Bayi");  
  function1();  
  println("Datuk");  
}
```

```
void function2() {  
  println("Cucu");  
}
```

[2 marks]

**Continued...**



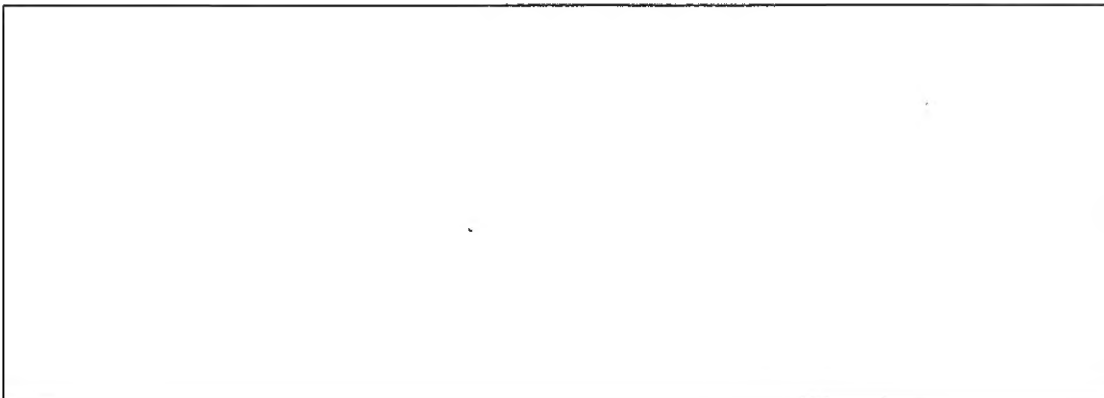
(ii)

```
void draw() {  
  println("Ayah");  
  function2();  
  noLoop();  
}
```

```
void function1() {  
  println("Bayi");  
}
```

```
void function2() {  
  println("Cucu");  
  function1();  
  println("Datuk");  
}
```

[2 marks]



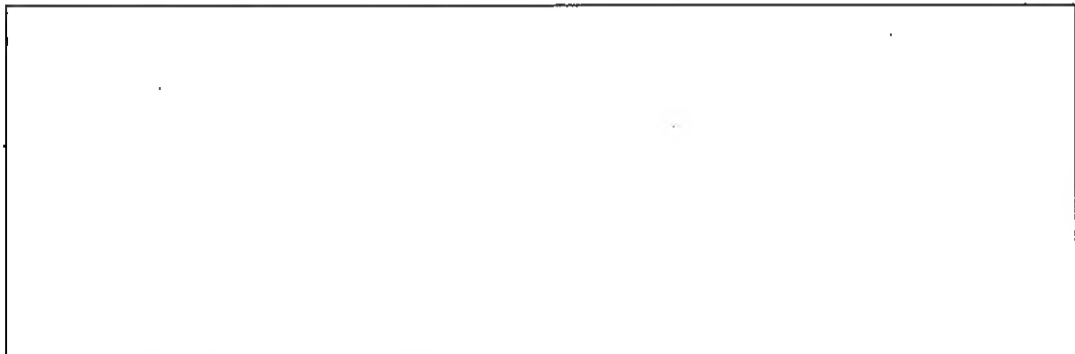
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(iii)

```
void draw() {  
  function2();  
  function1();  
  noLoop();  
}
```

```
void function1() {  
  println("Bayi");  
  function2();  
  println("Datuk");  
}
```

```
void function2() {  
  println("Cucu");  
}
```



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